

What is claimed is:

1. A capping product for capping and treating a metal-contaminated sediment comprising a plurality of manufactured composite particles, each
5 composite particle comprising a relatively dense core and a sealant layer at least partially encapsulating the core, the sealant layer being capable of absorbing water and swelling to form a layer on the sediment, the sealant layer containing sulfur and at least one component selected from the group consisting of clays, clay-sized materials, bulking agents, sand, sand-sized materials, and binding agents.
- 10 2. A capping product according to claim 1 wherein the sealant layer contains bentonite.
3. A capping product and a metal-contaminated sediment, the capping
15 product capping and treating the sediment, the capping product containing sulfur and at least one component selected from the group consisting of clays, clay-sized materials, bulking agents, sand, sand-sized materials, aggregate, and binding agents.
- 20 4. A capping product and sediment according to claim 3 wherein the capping product contains bentonite.
5. A method of treating a metal-contaminated sediment comprising
25 capping the sediment with a capping product containing sulfur and at least one component selected from the group consisting of clays, clay-sized materials, bulking agents, sand, sand-sized materials, aggregate, and binding agents.
6. A method according to claim 5 wherein the capping product includes a dry clay mineral.

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7. A method according to claim 5 wherein the capping product includes bentonite.

8. A method according to claim 5 wherein the sulfur is elemental,
5 sulfur.

9. A method according to claim 8 wherein the elemental sulfur is chemically reduced to sulfide.

10. A method according to claim 5 wherein the capping product contains at least sulfur, clay and aggregate.

11. A method according to claim 5 wherein the sediment is capped by applying the capping product in the form of a plurality of manufactured composite
15 particles.

12. A method according to claim 11 wherein the composite particles absorb water and swell to form a layer of the capping product over the sediment.

13. A method according to claim 11 wherein the composite particles comprise a core and a sealant layer at least partially encapsulating the core, the sealant layer being capable of absorbing water and swelling.

14. A method according to claim 5 wherein the sediment is capped by
25 applying the capping product in the form of an amalgamated mass of material containing sulfur, optionally aggregate, and at least one component selected from the group consisting of clays, clay-sized materials, bulking agents, sand, sand-sized materials, and binding agents.

15. A method according to claim 5 wherein the treatment sequesters the metal.

16. A method according to claim 15 wherein the treatment sequesters
5 the metal by a chemically reduced form of the sulfur, sulfide, reacting with the metal to form metal-sulfide complexes.

17. A method according to claim 16 wherein the sediment is an
underwater sediment, and wherein the metal-sulfide complexes are relatively
10 insoluble in the water.